

Technical Glossary

16-bit	Outdated microprocessor (CPU) chip technology (e.g., Intel 8088, 80286)
32-bit	Current microprocessor (CPU) chip technology for desktop workstations (e.g., Intel 80486, Pentium), fully exploited by Microsoft Windows NT and Windows 95 OSes
4GL	(See Fourth Generation)
64-bit	Current high-end microprocessor (CPU) chip technology for high-performance server machines and for mainframe systems (e.g., DEC Alpha)
	An IEEE standard for wireless network communications (radio, infrared, and optical)
ACPI	Advanced Configuration and Power Interface specification (Microsoft, Intel, Toshiba) for managing and conserving electrical usage in servers, small computer systems, and other business equipment
AD	Active Directory, an advanced directory service available with Windows NT 5.0 that is LDAP-compliant and DNS-based and interacts in a heterogeneous network
ActiveX	A Microsoft Internet-based standard for intra- and interapplication information sharing, that supersedes OLE
ADSL	Asymmetric Digital Subscriber Line, a new, high-performance telephone service for high-volume data transmission, offering faster downstream speeds than upstream speeds, and forming a part of a larger family of xDSL communications services
ADSM	A system for backing up local desktop disk storage to the DOE mainframe
AGP	Accelerated Graphics Port, a high-speed graphics port offered by Intel promoted to enhance 3-D graphics displays
AIIM	Association for Information and Image Management, an international consortium of multiple industries publishing standards for document management and workflow, including WfMC, ODMA, and others
Analog	Signaling accomplished by varying the information signal continuously so as to match the incoming real-world signal physically, as in basic telephone or sound-amplification technologies (in contrast to digital)
ANSI	American National Standards Institute, an organization coordinating industry standards across government and industry
API	Application Programming Interface, a set of programming and messaging conventions in an application allowing

	other programs to interact with it
ASP	Microsoft's Active Server Pages, a technology for delivering data to Web users querying an information system
ATM	Asynchronous Transmission Mode, a high-speed low-level method of transmitting data packets across networks, compatible with QOS and other advanced features
Attachment	(See File Attachment)
Authentication	(See Digital Authentication)
Backbone	The network infrastructure supporting all other portions of an enterprise network
Bit	Binary digit, capacity for just a 0 or a 1, or one-eighth element of a byte, a measurement of data transmission rate
Bridge	1) (See Router); 2) any software or hardware system that connects diverse components to permit interaction and data exchange
Bus	Hardware providing communications between CPU, memory, and computer ports and peripherals, normally built into the motherboard
Byte	Eight bits, capacity for 256 numbers or characters, a measurement of data storage capacity
Cable modem	A modem that communicates with cable television connections for high-speed network links, often at 10 Mbps to the remote machine, though at lower speeds from the remote machine to the network
Cache	Memory cache or CPU cache, high-speed memory regions servicing the CPU with frequently-used instructions and data, available as Level 1 (L1) cache built into the CPU or as Level 2 (L2) cache external to the CPU
Category 5 Wiring	Network cabling using copper wire and electrical signaling that provides speeds of 100 Mbps or better by conforming to certain technical specifications, in contrast to lower-grade Category 3 cabling
CGI	Common Gateway Interface, a method of programming Web servers to permit users to submit queries
C/S	(See Client/Server)
CD-ROM	Compact Disk-Read Only Memory, current widespread optical data storage technology holding up to 680 MB (0.68 gigabytes) per disk
Client/Server	Distribution of processing tasks between a high-performance network database machine (server) and a user's workstation (client) to reduce network traffic and to enhance data processing efficiency
COM	Common Object Model, a Microsoft standard for database object creation and management across networks,

	enhanced as COM+ and allied with DCOM (Distributed COM)
Concentrator	A hardware device connecting several desktop computers into the network, or linking several network segments together
CORBA	Common Object Request Broker Architecture, a multi-vendor standard for database object creation and management
COTS	Commercial off-the-shelf prepackaged software, often customizable or programmable
CPU	Central processing unit, the microprocessor chip at the core of desktop and other computers (e.g., Intel Pentium, Motorola 68040, DEC Alpha)
DBMS	Database management system, a software system controlling databases and their user interfaces
DCE	Distributed Computing Environment, an industry standard for multi-platform programming and communication
DCOM	(See COM)
DEN	Directory-Enabled Networking, a Microsoft-led multi-vendor effort to integrate DS features with network management, security, telephony, and other network services
DES	Digital Encryption Standard, a Federally mandated method of data encryption, using a single key for both encryption and decryption (a.k.a. symmetric)
DHCP	Dynamic Host Configuration Protocol, based on Microsoft Windows NT services, a method of assigning TCP/IP network addresses to logged-in users as needed, rather than on a static or fixed basis, in order to improve utilization of the limited pool of IP addresses
Digital	Signaling accomplished by varying the information signal in only two ways (representing 0's and 1's) according to a numeric encoding of the incoming real-world signal, as in long-distance telephone services or satellite transmissions (in contrast to analog)
Digital Authentication	A security system that assures the identity of the origin of an electronic transmission (non-forgery and non-repudiation) and its integrity (non-tampering) via a system of digital signatures, electronic certificates, and certification authorities
Directory Services	System for making network-wide resources available transparently to users on a secure basis
Disk	(See Drive)
DMI	Desktop Management Interface, a standard for network-based manipulation of workstation components from a central site

DMTF	Distributed Management Task Force, Inc. (formerly Desktop Management Task Force, Inc.), a standards organization that governs DMI and other systems management specifications and standards
DNS	Domain Naming Service, an Internet system for hierarchically organizing workstations and networks
Document Management	Managing, indexing, and searching facility for many varieties of electronic documents and files
DOS	Outdated 16-bit operating system for desktop computers, using character-based screens
Downstream	Data sent from a high-performance network machine to a user's desktop computer, i.e., from the network
DRAM	Dynamic RAM, the moderate-speed type of general memory found in older computers
Drive	A hardware device housed in a computer, containing a disk for data storage; hard disks are normally permanently installed in their drives, while diskettes and optical disks (CD-ROMs, DVDs, etc.) are removable or swappable
DS	Directory Services, a database offering applications access control and security of users on a network
DS3	A network transmission technology rated at 44.7 Mbps
DSL	(See ADSL)
DSS	Decision support system, a specially configured database designed to present information in easily comprehensible formats
DVD	Digital Versatile Disk, a new optical storage technology resembling CD-ROM but with data storage capacities between about 5 GB and 20 GB per disk (DVD-ROM means DVD-Read Only Memory, DVD-RW means DVD-Read/Write technology)
EDI	Electronic data interchange, the secure direct exchange of corporate information in computer-processable format according to industry standards
EDO	Extended Data Out RAM, a moderately high-speed type of general memory
EIS	Executive information system, a database designed to filter and summarize data
E-mail	Electronic mail, the transmission and storage of text-only messages, now expanded to incorporate transmission of more advanced types of data
Ethernet	A widely used networking technology operating in SC at a rate of 10 Mbps to the desktop
FDDI	A low-level method of transmitting packets across a fiber optic network, now superseded by ATM and other technologies
Fiber Optic	A type of network cable with a glass core that transmits

	data using optical (light) signals rather than electrical, providing protection against electrical interference and eavesdropping, but costing more than copper wiring for cabling and concentrators
File	The lowest unit of data organization during storage, analogous to the packet as the lowest unit of data organization during transmission; databases and applications consist of multiple files
File Attachment	A file sent as part of an electronic mail message, specially handled to prevent data corruption during transmission
FIPS PUBS	Federal Information Processing Standard Publications, documents and white papers for computer and information system standards and practices, issued by NIST
Firewall	A security feature to protect a network site and its systems from outside attack, often phrased as "inside the firewall" meaning the protected in-house portion of the network, and "outside the firewall" meaning the unprotected area of network services
FMIS	Financial Management Information System, an SC-specific database system for budget management, replacing BMIS
Fourth Generation	Advanced and current computer-programming languages, with substantial automation of many routine processes
GB	Gigabytes (billion bytes), a measurement of data storage capacity
Gbps	Gigabits (billion bits) per second, a measurement of data transmission rates across networks
H.323	An ITU standard for videoconferencing over local networks and the Internet
HSM	Hierarchical storage management, a data storage system that speeds up access to frequently used files while migrating rarely used files onto cheaper, slower storage media
HTML	Hypertext Markup Language, a W3C scripting standard for presenting World Wide Web pages on the Internet, defining page layout, fonts, and multimedia elements
HTTP	Hypertext Transport Protocol, a method of data exchange fundamental to World Wide Web technology
Hub	(See Router)
IEEE	Institute of Electrical and Electronics Engineers, an international professional society promoting the advancement and standardization of electronic and computer engineering
IIS	Microsoft's Internet Information Server, a system of server software for building Internet and Web information sites
IMAP4	Interactive Mail Access Protocol 4, an Internet standard for accessing e-mail on a server

IMSC	The corporate database system being developed within and for the Office of Science in accord with the ongoing Information Architecture project
IP	Internet Protocol, a global standard for routing data on the Internet (part of TCP/IP)
IPng, IPv6, Internet 2	Internet Protocol Next Generation (version 6), the new specification for Internet data transmissions currently under development, with significantly improved technical capabilities such as speed, addressing, and quality-of-service control
IPX/SPX	Internetwork Packet eXchange/Sequenced Packet eXchange, a proprietary Novell system for transmitting data on a network
IRC	Information Resources Catalog, a database compiled by the Information Architecture Planning effort
ISDN	Integrated Services Digital Network, a digital connection standard and service for data transmission, available from telephone companies
ISO	International Standards Organization, representing 75 nations including the U.S., and governing standards for computing, networking, and other technical fields
ISP	Independent Service Provider, a company providing Internet connections to dial-up users
ITU	International Telecommunication Union, incorporating the former Comité Consultatif International Téléphonique et Télégraphique (CCITT), an agency of the United Nations that promotes public- and private-sector coordination of global telecommunications
Java	A proprietary programming language from Sun Microsystems, Inc., based on the C++ language and supporting Internet and World Wide Web browser functions
KB	Kilobytes (thousand bytes/characters), a measurement of data storage capacity
Kbps	Kilobits (thousand bits, which are one-eighth divisions of a byte) per second, a measurement of data transmission rates across networks
L2	(See Cache)
LAN	Local area network, a computer network at a single site
LDAP	Lightweight Directory Access Protocol, a directory services suite that is a subset of X.500
Load	The amount of data packets being sent through a network (transmission load), or the number of requests to access data in a computer (transaction load)
MAPI	Mail Application Programming Interface, a programming structure for sending and receiving e-mail with the

	Microsoft messaging system
MB	Megabytes (million bytes), a measurement of data storage capacity
Mbps	Megabits (million bits) per second, a measurement of data transmission rates across networks
Memory	Short-term computer storage, electrically powered, used for rapid transfer of programs and data to and from the CPU, also called RAM (random-access memory)
MIME	Multipurpose Internet Multimedia Extensions, a protocol for Internet e-mail and information transfer accommodating file attachments
MMX	Multimedia Extension, a set of CPU instructions for enhancing multimedia processing
MPX	Microsoft Project Exchange, a file format for data transfer used with MS Project
MS	Microsoft Corp.
N-tier	Distribution of processing tasks across two or more platforms connected via a network, to reduce network traffic and to enhance data processing efficiency (as in client/server architecture, which is commonly just two-tier in structure)
NDS	Novell Directory Services, a directory services suite integrated into the current version of Novell Netware
Network Management	The technical "control tower" for monitoring and maintaining network functions in real time
NIC	Network interface card, the circuit board inserted into a computer to provide network access
NT	(See Windows NT)
Node	A computer, router, or similar electronic device forming part of a network
OC3	A medium-speed optical network technology, rated at 155 Mbps
OC12	A high-speed optical network technology, rated at 622 Mbps
OCR	Optical character recognition, the automated conversion of graphical images of text, such as fax files or scanned documents, into actual text files
ODMA	Open Document Management Architecture, an AIIM standard for managing many varieties of electronic documents and files
OLE	Object Linking and Embedding, an obsolete Microsoft standard for intra- and interapplication information sharing
OO, OOP	Object-Oriented programming methods, as opposed to procedural programming, which expressly supports reuse of program modules
OS	Operating system software, which runs the hardware and

	makes it possible to run application software on a computer
OSI	Open System Interconnection, an ISO standard for network connectivity and communications, constructed in a seven-layer model
Packet	The lowest unit of data organization during transmission, analogous to the concept of the file as the lowest unit of data organization during storage; packets are fixed in size or length, however
Partition	1) The use of a single hard disk to emulate two or more independent disks, to accommodate multiple operating systems or to optimize the disk's performance, or, 2) the division of a single network into two or more subset networks in order to optimize traffic flow
PCI	Peripheral Component Interconnect, an Intel-proprietary standard for connecting peripheral devices to a computer or CPU
PKI	Public Key Initiative, an effort to coordinate the use of RSA and digital authentication
PDA	Personal digital assistant, one of several portable/hand-held computer-like devices with connections to a network
Pentium	Family of current-generation 32-bit CPUs from Intel, whose most up-to-date version is called the Pentium II, offering high-speed processing from 233 MHz to 400 MHz and containing built-in MMX instructions
POP3	Post Office Protocol 3, an Internet standard for receiving e-mail from a server
PowerPC	Family of current-generation CPUs used in Apple Macintosh computers, ranging in processing speed up to 350 MHz
Protocol	A set of technical rules for data and network information exchange
Proxy	Use of a buffering computer or system to help provide security for a network against outside attack
QA	Quality assurance, the debugging and correction of customized applications
QOS	Quality of service, an "intelligent" method of sending data on a network, according to requirements of speed, non-delay, and guaranteed delivery
RAID	Redundant Array of Inexpensive Disks, a system of multiple hard disks providing greater reliability, fault tolerance, and hot-swappability
RAM	(See Memory)
RIMS	An SC-specific database under development, designed to facilitate submission of proposals
Router	A network device that directs data packets toward their

	destinations, similar in function to switches, hubs, and bridges
RSA	Rivest/Shamir/Adleman method of data encryption, using one key for encryption and a separate key for decryption (a.k.a. asymmetric, public-key/private-key)
SAN	Storage Area Network, large-capacity storage systems of varying types (such as mainframe, tape, or file server) whose services are made accessible via the DOE network to a wide variety of users for any storage function
SDRAM	Synchronous Dynamic RAM, a high-speed type of general memory linked to the system clock
SGML	Standard Generalized Markup Language, the standard for creating markup languages like HTML, VRML, or XML
Slot 1	A physical configuration of computer motherboards to permit easy upgrading of one or two CPUs and cache, with an advanced version known as Slot 2 accommodating four CPUs
S.M.A.R.T.	Self-Monitoring Analysis and Reporting Technology, a system for reporting deteriorating disk drives in advance of actual failure
Smart Card	A "computer on a card" with built-in CPU and memory, along with wired-in or wireless network connections, carrying critical information such as security information, account balances, etc.
SMP	Symmetric multiprocessor technology, computers using multiple CPU chips simultaneously for core processing
SMS	Microsoft Systems Management Server, automation of distribution and management of desktop software
SNMP	Simple Network Management Protocol, a set of specifications for technical management of networks from a central point
Socket 7	Outdated method of managing and upgrading CPUs and their motherboards, including speed limitations of 300 MHz on CPU operations
SQL	Structured Query Language, an industry standard for database access in a client/server environment
SRAM	Static RAM, an expensive, high-speed type of memory used for caching and similar specialty functions
SSL	Secure Sockets Layer, a networking security feature utilizing encryption, commonly found in World Wide Web communication
Storage	Magnetic or optical hardware devices for keeping data intact and making it available for use indefinitely without the need for continuous electrical power; examples include hard disks, CD-ROM, DVD, and tape backup
Switch	(See Router)

System 8	Operating system for Apple Macintosh computers, designed to take advantage of newer CPU hardware and to improve graphics and networking capabilities, and replacing the obsolete System 7
T1	A network transmission technology rated at 1.544 Mbps
T3	A network transmission technology rated at 44.7 Mbps
T.120	A series of ITU standard specifications for real-time data conferencing, including application sharing and whiteboarding
TB	Terabytes (trillion bytes), a measurement of data storage capacity
TBD	To be determined
Tbps	Terabits (trillion bits) per second, a measurement of data transmission rates across networks
TCP/IP	Transmission Control Protocol/Internet Protocol, a standard for transmitting data on the Internet
Thin Client	A workstation or desktop computer with reduced functionality (and typically with a lower price) that relies on other network equipment for most of its processing needs
UML	Unified Modeling Language, an object-based standard for database constructions including business process, data, application
Unix	High-end operating system for 32-bit and 64-bit high-performance CPUs and mid-level computers
Upstream	Data sent from a user's desktop computer to a high-performance network machine, i.e., to the network
USB	Universal Serial Bus, a hardware interface supporting multiple desktop computer peripherals (keyboard, mouse, printer, etc.) on one port
uuencode, uudecode	A scheme for converting computer files into text transmissible over e-mail
VIM	Vendor-Independent Messaging, a programming interface supported by multiple vendors for easy e-mail access from within desktop applications
VLAN	Virtual Local Area Network, a network functioning like a LAN but defined by groups or addresses rather than merely by geographic arrangement, used in configuring network management, and supported by the draft IEEE standard 802.10
VPN	Virtual Private Network, a private network operating on a public network infrastructure as a VLAN, using various security features to assure privacy
VRML	Virtual Reality Markup Language, a multimedia markup language for presenting virtual reality systems
W3C	World Wide Web Consortium, the international body that

	controls World Wide Web standards and protocols
WAN	Wide-area network, a computer network encompassing multiple geographical sites
WBEM	Web-based Enterprise Management, a Microsoft initiative for technical management of network infrastructure systems via the World Wide Web
WfMC	Workflow Management Coalition, an international subgroup of AIIIM and its published standard for workflow products
Windows 3.x	Outdated 16-bit operating environment for desktop computers, using graphics-based screens and based on DOS foundation
Windows 95	Hybrid graphics-based operating system for desktop computers, mixing 16-bit and 32-bit operations
Windows NT	Current 32-bit operating system for desktop computers, using graphics-based screens, supporting multiple file systems and expandable to 64-bit CPUs, and available in NT Desktop and NT Server versions
X.400	A set of ITU standards for e-mail addressing and transmission
X.500	A set of ITU standards for directory services, e-mail transmission, and other network services
xDSL	(See ADSL)
XML	Extensible Markup Language, a W3C advanced scripting standard with detailed style sheets for presenting World Wide Web pages on the Internet
Year-2000, Y2K	The potential for computer system errors in working with dates in the year 2000 and beyond, due to older programming techniques that handled dates as two-digit numbers